USSR

TKACHEV, V. I., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9,
No 5, 1973, pp 102-103

ethylene coatings of high density increase the corrosion-fatigue strength
of 30KhGSNA steel specimens in aggressive media; this increase is most
effective in acid media. The most protective effect of polyethylene coating
was found on hardened and low-temperature annealed specimens. Two figures,
one table, eight bibliographic references.

2/2

Inorganic Compounds

BEYDIN, V. K., VOROSHILOV, I. P., GORBACHEZ, A. K., NECHIPORENKO, N. N.,
and VOROSHILOV, P. KH.

"A Process for Preparing Sulfuric Acid"

Translation: A process is patented for reparing H_2SO_4 by the electrolysis of
an aqueous solution of metal sulfates, during the depolarization of the anode
by a sulfur gas in the presence of a catalyst in the electrolyte. This pro-
cess is improved in that to increase the degree of utilization of the sulfur
dioxide and to decrease the anode potential to increase the yield of the final
product, a soluble halide salt is added to the electrolyte as a catalyst
which is preferential for the cation, similar to the cation of the electrolyte.
The catalyst is added in concentrations of 0.1 to 50 grams/liter. The pro-
cess is carried out for a D_a of 500 to 3,000 amps/m^2 and at an electrolyte
temperature of 20-90°. For example, the electrochemical processing of Na_2SO_4,
the electrolysis is carried out in a three chamber electrolysis apparatus with
1/2

USSSR

BEYDIN, D. K., et al., USSR Author's Certificate No 189821, filed 6 Jan 69, published 5 Sep 72

an iron (wire-gauze) cathode and a hollow graphite anode with a porosity of 33%. The initial electrolyte (Na_2SO_4) is added to a concentration of 290/grams/liter in the middle compartment of the apparatus. To the electrolyte is added 0.56 grams/liter of NaCl. The sulfur dioxide evolves under a pressure of 150 mm of mercury in the hollow part of the anode and it migrates through the pores of the graphite to the anolyte. The process goes at temperatures of the original electrolyte of $60°$, and a charge on the electrolytic apparatus of 5 amps and D_a of 1000 amps/m^2. It was determined that the anode potential was 1.15 volts and the efficiency of the utilization of the sulfur gas was 75-80%.

2/2

1/2   009

UNCLASSIFIED   PROCESSING DATE--30OCT70

TITLE--USE OF ELECTROLYTIC SODIUM BISULFATE FOR PRESERVING GREEN PLANTS
-U-

AUTHOR-(03)-BEYDIN, V.K., PESOTSKIY, V.F., RADINA, G.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. SEL. KHOZ. 1970, 8(2), 139-40

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--SODIUM COMPOUND, SULFATE, HYDROGEN COMPOUND, PLANT SPRAYING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1370   STEP NO--UR/0394/70/008/002/0139/0140

CIRC ACCESSION NO--AP0125018

UNCLASSIFIED

2/2   009   UNCLASSIFIED   PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125018
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTROLYTICALLY PRODUCED NAHSO
   SUB4 IN THE FORM OF PELLETS OR FLAKES AND WATER SOL. (50PERCENT),
   CONTAINS 82-99PERCENT NAHSO SUB4 AND HAS A D. OF 2.47. THE PRESERVATIVE
   PROPERTIES FOR GREEN PLANTS ARE SIMILAR TO THOSE OF OTHER PRESERVATIVES.

UNCLASSIFIED

AT0033904

NUCLEAR S ABST. 1/10 UR 0000

3089   (N–69–36291)   X-RAY EMISSION FROM THE SOLAR
CORONA. Beigman, I. L. (and others). (Akademiya Nauk
SSSR, Moscow. Institut Fiziki). Translation of Russian Pre-
print No. 104. 22p. (NASA-CR-105625). CFSTI.

A number of new experimental data have recently become avail-
able on the spectrum of the solar corona in the x-ray region (1 to
30 Å). In this paper, the spectrum is theoretically calculated with
a number of refinements compared to previous computations.
Specifically, dielectronic recombination and photorecombination
on all levels were taken into consideration in calculating the ion-
ization equilibrium. A computer was used for determining the ef-
fective cross sections of excitation, ionization, dielectronic re-
combination and photorecombination necessary for calculating
population intensities. (auth) (STAR)

1/1

12

19710530

1/2   018
TITLE--BORN CROSS SECTION FOR THE N, N PRIME TRANSITICT -U-

UNCLASSIFIED   PROCESSING DATE--27NOV70

AUTHOR-(03)-BEYGMAN, I.L., URNOV, A.M., SHEVELKO, V.P.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 5, PP 1825-1829

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HYDROGEN, ATOM, GREEN FUNCTION, ELECTRON TRANSITION, OXCILLATOR STRENGTH, CAPTURE CROSS SECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0015   STEP NO--UR/0056/70/058/005/1825/8129

CIRC ACCESSION NO--AP0127665
                    UNCLASSIFIED

2/2   018
CIRC ACCESSION NO--AP0127665   UNCLASSIFIED   PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ANALYTIC EXPRESSION FOR THE
TOTAL (WITH RESPECT TO L AND L PRIME) SQUARED BORN AMPLITUDE FOR THE N,
N PRIME TRANSITION IS OBTAINED BY MEANS OF THE COULOMB GREEN'S FUNCTION.
TTHE FORMULA CAN BE SIGNIFICANTLY SIMPLIFIED IN THE LIMITING CASES OF
LARGE VALUES OF N AND N PRIME. AN EXPRESSION FOR THE TRANSITION CROSS
SECTION IS OBTAINED AT HIGH ELECTRON ENERGIES WHICH IS SIMILAR TO THE
KRAMERS APPROXIMATION FOR OSCILLATOR STRENGTH (1 IS MUCH LESS THAN DELTA
N IS MUCH LESS THAN N).   FACILITY: FIZICHESKIY INSTITUT IM. P.
N. LEBEDEVA, AN SSSR.

UNCLASSIFIED

1/2   032   UNCLASSIFIED   PROCESSING DATE--20NOV70

TITLE--THERMAL MODEL OF THE ACTIVE REGION OF THE SOLAR CORONA -U-

AUTHOR-(02)-BEYGMAN, I.L., VAYNSHTEYN, L.A.

COUNTRY OF INFO--USSR

SOURCE--TRANSLATED FOR CULHAM LAB., ABINGDON, ENG., FROMPREPRING NO. 94.
26P. DEP. CFSTI CTO-705

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--SOLAR CORONA, X RAY, RESONANCE LINE, IONIZATION, MODEL, SOLAR
ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0644   STEP NO--UR/0000/70/000/094/0026/0026

CIRC ACCESSION NO--AT0129722

UNCLASSIFIED

CIRC ACCESSION NO--AT0129922

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE X RAY FLUXES IN THE RESONANCE
LINES LAMBDA LESS THAN 25 ANGSTROM OF THE MOST ABUNDANT IONS IN THE
SOLAR CORONA WERE CALCULATED FOR A WIDE RANGE OF TEMPERATURES (0.2 TO
18) TIMES 10 PRIME6 DEGREESK. THE RATES OF EXCITATION, IONIZATION, AND
RECOMBINATION (PHOTO AND DIELECTRONIC) OBTAINED PREVIOUSLY BY NUMERICAL
METHODS WERE USED. THE CALCULATED FLUXES WERE USED TO ANALYZE
EXPERIMENTAL DATA ON THE EMISSION OF THE ACTIVE REGIONS IN THE SPECTRAL
RNAGE LAMBDA LESS THAN 25 ANGSTROM. IT WAS ASSUMED THAT THE
PHOTOSPHERIC ABUNDANCE OF C, N, AND O IN THE CORONA IS CORRECT AND THE
ABUNDANCES OF NE, MG, AND FE WERE CALCULATED FROM EXPERIMENTAL DATA.
THE ANALYSIS WAS BASED ON A THERMAL MODEL OF THE ACTIVE REGION. THE
AVAILABLE DATA CAN BE DIVIDED INTO TWO GROUPS. IT IS SHOWN THAT ALL
CASES CAN BE DESCRIBED BY A MODEL OF THE ACTIVE REGION WITH A
TEMPERATURE T EQUALS 2.5 TO 3 (IN UNITS OF 10 PRIME6 DEGREESK) THE ONLY
DIFFERENCE BEING IN THE EMISSION MEASURE Y TRIPLE BOND OR NEGATIVE
CHARGE N PRIME2 SUBE V-3.2 TIMES 10 PRIME49 CM PRIME NEGATIVE3 EQUALS
0.07 TO 0.16. TO DESCRIBE THE OBSERVATIONS ONE HAS TO ADOPT A SMOOTH
VARIATION OF T UP TO T SUB1 AND THE ESTIMATE T EQUAL 4 IS OBTAINED FROM
THE RELATIVE FLUXES FE XVII-FE XVIII. THE ABUNDANCES PROPOSED BY
VARIOUS AUTHORS ARE COMPARED. THE TOTAL X RAY FLUXES IN THE INTERVALS
LAMBDA WINGS LAMBDA PLUS DELTA LAMBDA FOR THE SPECTRAL RANGE LAMBDA LESS
THAN 25 ANGSTROM ARE CALCULATED FOR THE DIFFERENT SETS OF ABUNDANCES AND
TEMPERATURES AT DELTA LAMBDA EQUALS 0.2 AND 1 ANGSTROM.
FACILITY: AKADEMIYA NAUK SSSR, MOSCOW. INSTITUT FIZIKI.

1/2   023   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--ALUMINUM POLYOLEFIN COMPOUNDS -U-

AUTHOR-(05)-CHIRKOV, N.M., BEYKHOLD, G.A., BRIKENSHTEYN, KH.M., KANASHKIN,
   YU.F., MATKOVSKIY, P.YE.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,692
REFERENCE--OTKRYTIYA, IZOBRET., PROM OBRAZTSY, TOVARNYE ZNAKI, 1970 47(9),
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, ALUMINUM, POLYOLEFIN RESIN, POLYMERIZATION,
   ETHYLENE, METAL CONTAINING POLYMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0848   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136282
                   UNCLASSIFIED

CIRC ACCESSION NO--AA0136282
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AL, POLYOLEFIN COMPDS. ARE PREPD.
BY POLYMN. OR COPOLYMN. OF C SUB2 H SUB4 WITH OTHER ALPHA, OLEFINS IN AN
INERT HYDROCARBON SOLVENT IN THE PRESENCE OF AL OR ITS ALLOYS (E.G., IN
THE FORM OF POWDER, FLAKES, WIRE, AND SHAVINGS) AND A CATALYST. THE
CATALYSTS USED ARE TRANSITION, METAL HALIDES OR HYDROXYHALIDES SOL. IN
HYDROCARBONS, E.G. V HYDROXYCHLORIDE.   FACILITY: FILIAL
INSTITUTA KHIMICHESKOY FIZIKI AN SSSR.

UNCLASSIFIED

USSR

UDC: 51

BEYKO, I. V.

"A Maximin Set and Algorithm for its Construction"

V sb. Nekotor. vopr. prikl. mat. (Some Problems of Applied Mathematics--
collection of works), vyp. 5, Kiev, 1971, pp 175-177 (from RZh-Kibernetika,
No 1, Jan 72, Abstract No 1V763)

Translation: The author introduces the concept of a maximin set for the
first player in an antagonistic game.. A criterion is presented for the
maximin property of a set, and a certain algorithm is described for find-
ing it in the case where the set of pure strategies for this player is
finite. It should be mentioned that the exposition is not sufficiently
clear, and that some of the notation is inaccurate. I. Fokin.

1/1

USSR   UDC: 519.3:51:62-50

BEYKO, I.V., Institute of Mathematics, Academy of Sciences Ukrainian SSR

"Some Evaluations of Maxmin Time and Absorption Time in a Chasing Problem,
Optimality Conditions and a Chasing Algorithm"

Kiev, Dopovidi Akademii Nauk Ukrains'koi RSR, Seriya A -- Fizyko-Tekhnichni
ta Matematychni Nauky, No 11, Nov 70, pp 968-971

Abstract: The article considers the problem of the chasing of
object y by object x, the objects changing position with time
in sets $Y \ni y$ and $X \ni x$ according to the equations

$$x = A(x^0, u, t), \quad y = B(y^0, v, t)$$

where x^0 and y^0 are the positions of the objects at the initial

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USSR

moment of time $t = t_0$, u and ν are controls (elements of given
sets U and V), and A and B are given transforms of the sets D^X
$\times$ U $\times$ R and $D^Y \times$ V $\times$ R respectively in the set D^X and D^Y. $T^K_{u,v}$
denotes the minimum value of time (if it exists) in which
$(A(x^0, u, t), B(y^0, v, t)) \in K$, and T^K denotes $\sup\limits_{v \in V} \inf\limits_{u \in U} T^K_{u,v}$. $K, \mathcal{E}$
is the problem. For given $\mathcal{E} > 0$ and $K \subset D^X \times D^Y$ find con-
trols $u_K^\varepsilon \in U$, $v_K^\varepsilon \in V$ such as satisfy the condition

$$|T^K_{u_K^\varepsilon v_K^\varepsilon} - T^K| < \varepsilon, \ \varrho(A(x^0, u_K^\varepsilon, T^K_{u_K^\varepsilon, v_K^\varepsilon}) \times B(y^0, v_K^\varepsilon, T^K_{u_K^\varepsilon v_K^\varepsilon}), K) < \varepsilon.$$

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USSR

The author modifies the method previously suggested by
him for finding absorption time $\overline{T}^K$ in the case of the set $K \equiv K_s$
$= \{ v, y \mid v_i = y_i, i = 1, \ldots, s \}$ and process controls which are described
by systems of ordinary differential equations of order n, in
which the sets $D_\varphi = \{ x, y \mid \psi^*(x-y) = 0, \psi_i = 0, i > s \}$ were selected
as elements of the K-optimal set G. If $V(t)$ is chosen instead
of V in the suggested algorithms, B-algorithms are automatically
obtained for finding controls which satisfy the necessary condi-
tions for optimality on the basis of maximin time of the K,O-
problem. A theorem is derived which permits the formulation of
various optimality criteria with respect to the functionals ϕ
chosen. It follows from this theorem that the K,O-problem de-
composes into two problems

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USSR

$$\Phi\left(P_i B\left(y^0, \bar{v}, T^K\right)\right) = \max_{v \in V(T^K)} \Phi\left(P_i B\left(y^0, v, T^k\right)\right),$$

and

$$\Phi\left(P_i A\left(x^0, \bar{u}, T^K\right)\right) = \max_{u \in U} \Phi\left(P_i A\left(x^0, u, T^K\right)\right),$$

If these two problems satisfy conditions under which the maximum principle is in effect, control u^0 satisfies the maximum principle and control v^0 satisfies the maximum principle with certain phase constraints.

4 /4

BEYL", A. L., and PORTNOV, G. G., Institute of Mechanics of Polymers of the
Academy of Sciences Latvian SSR, Riga

"Possible Creep Mechanism of Multilayer Composite Rings Under Internal
Pressure"

Abstract: The deformability of a ring consisting of helically arranged
reinforcing layers and a polymeric bonding agent is analyzed. In measuring
the dislocations of the external ring surface under the action of an internal
pressure, the creep of the material cannot properly be distinguished from the
crawling apart of the ring. At prolonged action of internal pressure, under
increased pliability conditions of the matrix, the development of additional
deformations caused by the crawling of the coils is possible. The analysis
of creep deformation effected by this crawling signifies that the elasticity
of the rigid reinforcing layer has little effect on the deformations related
to the crawling of the ring. Four figures, 24 formulas, seven bibliographic
references.

1/1

USSR   UDC 613(470)(091)

SHITSKOVA, A. P., AKSYUK, A. F., BEYLIKHIS, G. A., GNOYEVAYA, V. L., GUSEV, M.I.,
ZHILIN, P. N., NOTKIN, Ye. L., PAL'TSEV, Yu. P., and YASTREBOV, G. G.

"Coping With Current Health Problems in the RSFSR"

Abstract: Health problems were a major concern of the communist leaders after
the revolution who swiftly organized agencies and services to deal with
epidemics and famines. As these were brought under control, health officials
became involved in city planning, design and building of houses, etc. The
increasing tempo of industrialization led the authorities by the 1930's to
study atmospheric pollution and the disposal of municipal and industrial sewage.
Water pollution and suitable use of water resources were major interests by
the 1940's. Following the war, industrial hygiene and occupational diseases
along with food poisonings became the center of attention. In the 1960's
research was focused on the problems created by the chemicalization of agricul-
ture, the use of pesticides in particular. The effects of exposure to ultra-
sound, radiation, microwaves, and other technological advances are now under
study. Much stress is placed on preventive medicine, with frequent mass check-
ups of the population, particularly children and adolescents. The importance of
1/2

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USSR

SHITSKOVA, A. P., Gigiyena i Sanitariya, No 12, 1972, pp 8-16

comprehensive, accurate health statistics was recognized in the 1920's and they are constantly being refined and improved as an indispensable basis for planning and taking effective action.

AA0040628

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-76

234642 PLASTIC COMPONENT PRESS MOULD comprises a split case 1 with a runner and a demountable shaped cavity 2 made of rubber with a slit 3. The cavity is taken out from the carcass when the poured plastic is solidified, and is opened up along the slit.

AUTHORS: Beylin, A. M.; Reynsburg, A. M.; Bondar', M. Yu.; Ripman, D. M.; Bakunin, V. A.; and Golovkov, G. V.

19750185

AAC040628
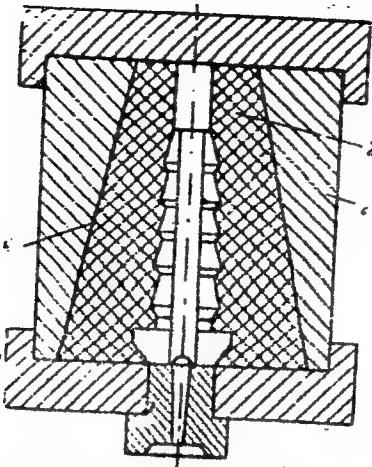
27.12.65. as 1045751/23-5, BEILIN, A.M. et al.
(26.6.69) Bul. 4/10.1.69. Class 39a^2 Int. Cl.
B 29c.

19750186

B

USSR

UDC 621.362.2(088.8)

BEYLIN, A. Yu., DUDKIN, L. D., ZYKOVA, N. P., KOLOMEYETS, N. V. MAZUR, V. A.,
TARTAKOVSKIY, D. L., KHANIN, M. A.

"A Thermocouple"

Translation: The proposed thermocouple contains a P-branch of germanium tellu-
ride, a commutation bus of iron, and a commutation substrate. A mechanical
mixture of tungsten and tin telluride, or tungsten and lead telluride is used
as the commutation substrate. This is to improve mechanical strength and reduce
power lost in commutation.

1/1

1/2   022   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--FORMATION OF A POLYCONJUGATED POLYMER DURING THE THERMAL
  DECOMPOSITION OF POLYACENAPHTHYLENE -U-
AUTHOR-(05)-MARKEVICH, I.N., BEYLIN, S.I., TETERINA, M.P., KARPACHEVA,
  G.P., POLGOPLOSK, B.A.
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 362-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CONJUGATED POLYMER, THERMAL DECOMPOSITION, NAPHTHALENE,
  NAPHTHENE, POLYMER STRUCTURE, CHEMICAL KINETICS, PYROLYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1092   STEP NO--UR/0020/70/191/002/0362/0365

CIRC ACCESSION NO--AT0124749
                    UNCLASSIFIED

CIRC ACCESSION NO--AT0124749
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMAL DECOMPN. OF
  POLYACENAPHTHYLENE (I) IN PHCL AND IN BULK STARTS AT 180DEGREES AND
  335-45DEGREES, RESP. THE PRODUCTS CONTAIN ACENAPHTHENE, ACENAPHTYLENE
  (II) A CONJUGATED POLYMER, BUT NO H. ON THE BASIS OF IR AND EPR
  SPECTROSCOPY THE POLYMER WAS ASSIGNED STRUCTURE III (N EQUALS 5-7).   THE
  FORMATION OF III INVOLVES THE SPLITTING OFF OF II FROM I AND THE REDN.
  OF II WITH I.   THE KINETICS OF I MOL. WT. DECREASE DURING THE PYROLYSIS
  IS DISCUSSED.   FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA,
  MOSCOW, USSR.

UNCLASSIFIED

USSR   UDC 539.67

BEYLIN, V. M., VEKILOV, Yu. Kh., KADYSHEVICH, A. Ye., and KRASIL'NIKOV, O. M.

"Effect of Alloying An Electrically Active Addition on Phonon Relaxation in
Certain Intermetallic Combinations"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in
Metallic Materials"), Moscow, Izd-vo "Nauka", 1970, pp 41-43

Abstract: It is shown that the observed ultrasonic absorption is determined by
the interaction of an elastic wave with crystal lattice oscillations. Alloy-
ing by an electrically active addition leads to increased absorption. Evalua-
tions of the effect of alloying on the absorption coefficient by using data on
the effect of alloying on third-order constants are presented. 2 figures,
5 references.

1/1

USSR $\mathcal{B}$ UDC 621.315.532

BEYLIN, V. M., VEKILOV, YU. KH,, KRASIL'NIKOV, O. M., Moscow
Institute of Steel and Alloys, Moscow, Ministry of Higher and
Secondary Specialized Education RSFSR

"Determining the Effective Masses of Current Carriers in Strongly
Alloyed Semiconductors by the Effect of Conduction Electrons
(Holes) on Elastic Constants"

Abstract: The effective masses of the density of states of
current carriers m_d^* in strongly alloyed semiconductors were
determined with respect to the temperature dependence of the
effect of conduction electrons (holes) on semiconductor elastic
constants. M_d^* are determined for troughs on the $\langle 111 \rangle$ and $\langle 100 \rangle$
axes in n-Ge, $\langle 100 \rangle$ in n-Si, and $\langle 000 \rangle$ in p-Si and p-GaAs.
The accuracy for the determination of m_d^* is not inferior to the
accuracy for the determination of effective mass in a strongly
alloyed material.
1/2

USSR

The most accurate direct method of determining effective mass --
the method of cyclotron resonance -- is inapplicable to strongly
alloyed semiconductors (the condition of wt ≫ 1 required for
resonance is not satisfied), and masses are usually determined
by methods having low accuracy. For this reason it is of in-
terest to investigate the possibility of determining m^* by
elastic constant data. The author's method permits sensing of
variation of m^*_d in the presence of strong alloying caused by the
nonparabolic nature of the bands (p-GaAs, p-Si), and it also per-
mits determination of effective masses in upper systems of minima.
Applicability of the method is limited to substances in which
the effect of conduction electrons (holes) on the elastic constant
is observed. Values of effective masses are tabulated for ger-
manium, silicon and gallium arsenide.

2/2

UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ELASTIC CONSTANTS OF STRONGLY DOPED N SILICON AND P GERMANIUM -U-

AUTHOR--BEYLIN, V.M., VEKILOV, YU.KH., KRASILNIKOV, O.M.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 684-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SILICON, GERMANIUM, DOPED ALLOY, HIGH PURITY METAL, METAL
ELASTICITY, ULTRASONIC EFFECT, INTERFEROMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0655 STEP NO--UR/0181/70/012/003/0684/0689

CIRC ACCESSION NO--AP0105634
UNCLASSIFIED

CIRC ACCESSION NO--AP0105634

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELASTIC CONSTS. OF PURE AND
STRONGLY DOPED N-SI AND P-GE WERE MEASURED BY THE ULTRASOUND
INTERFEROMETRIC METHOD AT 78-300DEGREESK. ALL THE ELASTIC CONSTS. (AND
THEIR TEMP. DEPENDENCES) OF STRONGLY DOPED SPECIMENS DIFFER CONSIDERABLY
FROM THE CORRESPONDING ELASTIC CONSTS. OF PURE SPECIMENS. IN THE CASE
OF N-SI, THE TEMP. DEPENDENCE OF THE CONST. C PRIME CHANGES INTO AN
OPPOSITE DEPENDENCE. VARIATION OF THIS ELASTIC CONST. IS PRODUCED BY
THE SAME MECHANISM OF INTERVALLEY SCATTERING AS THE VARIATION OF THE
ELASTIC CONST. C SUB44 IN N-GE. VARIATION OF C SUB44 IN N-SI IS DETD. BY
THE SPLITTING OF THE SUB BANDS DELTA SUB1 AND DELTA SUB2 IN THE SHIFT.
IN P-GE, VARIATION OF THE ELASTIC CONSTS. WITH DOPING IS RELATED TO THE
EFFECT OF DEFORMATION ON THE DISPERSION OF HOLES. FROM THE COMPARISON
OF THE EXPTL. DATA WITH THE CALCN., THE EFFECTIVE MASS WAS FOUND OF
STRONGLY DOPED N-SI AND THE CONSTS. OF THE DEFORMATION POTENTIAL, SIGMA
PRIME SUBU AND SIGMA SUBU. IN P-GE, THE DEFORMATION POTENTIAL CONSTS. B
AND D WERE FOUND.

UNCLASSIFIED

1/2   018   UNCLASSIFIED   PROCESSING DATE---04DEC70
TITLE--DETERMINING THE EFFECTIVE MASSES OF CURRENT CARRIERS IN STRONGLY
  ALLOYED SEMICONDUCTORS BY THE EFFECT OF CONDUCTION ELECTRONS HOLES ON
AUTHOR-(03)-BEYLIN, V.M., VEKILOV, YU.KH., KRASILNIKOV, O.M.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, FIZIKA I TEKHNIKA POLUPROVODNIKOV, VOL. 4, NO. 5, 1970,
  PP 912-914
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GERMANIUM, SILICON SEMICONDUCTOR, GALLIUM ARSENIDE
  SEMICONDUCTOR, ELECTRON HOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1452   STEP NO--UR/0449/70/004/005/0912/0914

CIRC ACCESSION NO--AP0136778
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0136778
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTIVE MASSES OF THE
DENSITY OF STATES OF CURRENT CARRIERS M SEXTILE SUBD IN STRONGLY ALLOYED
SEMICONDUCTORS WERE DETERMINED WITH RESPECT TO THE TEMPERATURE
DEPENDENCE OF THE EFFECT OF CONDUCTION ELECTRONS (HOLES) ON
SEMICONDUCTOR ELASTIC CONSTANTS. M SEXTILE SUBD ARE DETERMINED FOR
TROUGHS ON THE (111) AND (100) AXES IN N-GE, (100) IN N-SI, AND (000) IN
P-SI AND P-GAAS. THE ACCURACY FOR THE DETERMINATION OF M SEXTILE SUBD
IS NOT INFERIOR TO THE ACCURACY FOR THE DETERMINATION OF EFFECTIVE MASS
IN A STRONGLY ALLOYED MATERIAL. THE MOST ACCURATE DIRECT METHOD OF
DETERMINING EFFECTIVE MASS, THE METHOD OF CYCLOTRON RESONANCE, IS
INAPPLICABLE TO STRONGLY ALLOYED SEMICONDUCTORS (THE CONDITION OF ST 1
REQUIRED FOR RESONANCE IS NOT SATISFIED), AND MASSES ARE USUALLY
DETERMINED BY METHODS HAVING LOW ACCURACY. FOR THIS REASON IT IS OF
INTEREST TO INVESTIGATE THE POSSIBILITY OF DETERMINING M SEXTILE BY
ELASTIC CONSTANT DATA. THE AUTHOR'S METHOD PERMITS SENSING OF VARIATION
OF M SEXTILE SUBD IN THE PRESENCE OF STRONG ALLOYING CAUSED BY THE
NONPARABOLIC NATURE OF THE BANDS (P-GAAS, P-SI), AND IT ALSO PERMITS
DETERMINATION OF EFFECTIVE MASSES IN UPPER SYSTEMS OF MINIMA.
APPLICABILITY OF THE METHOD IS LIMITED TO SUBSTANCES IN WHICH THE EFFECT
OF CONDUCTION ELECTRONS (HOLES) ON THE ELASTIC CONSTANT IS OBSERVED.
VALUES OF EFFECTIVE MASSES ARE TABULATED FOR GERMANIUM, SILICON AND
GALLIUM ARSENIDE. 　　　　　FACILITY: INSTITUTE OF STEEL AND ALLOYA,
MOSCOW.

1/2   018   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--DETERMINING THE EFFECTIVE MASSES OF CURRENT CARRIERS IN STRONGLY
  ALLOYED SEMICONDUCTORS BY THE EFFECT OF CONDUCTION ELECTRONS HOLES ON
AUTHOR-(03)-BEYLIN, V.M., VEKILOV, YU.KH., KRASILNIKOV, O.M.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, FIZIKA I TEKHNIKA POLUPROVODNIKOV, VOL. 4, NO. 5, 1970,
  PP 912-914
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GERMANIUM, SILICON SEMICONDUCTOR, GALLIUM ARSENIDE
  SEMICONDUCTOR, ELECTRON HOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1452   STEP NO--UR/0449/70/004/005/0912/0914

CIRC ACCESSION NO--AP0136778
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0136778

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTIVE MASSES OF THE
DENSITY OF STATES OF CURRENT CARRIERS M SEXTILE SUBD IN STRONGLY ALLOYED
SEMICONDUCTORS WERE DETERMINED WITH RESPECT TO THE TEMPERATURE
DEPENDENCE OF THE EFFECT OF CONDUCTION ELECTRONS (HOLES) ON
SEMICONDUCTOR ELASTIC CONSTANTS. M SEXTILE SUBD ARE DETERMINED FOR
TROUGHS ON THE (111) AND (100) AXES IN N-GE, (100) IN N-SI, AND (000) IN
P-SI AND P-GAAS.   THE ACCURACY FOR THE DETERMINATION OF M SEXTILE SUBD
IS NOT INFERIOR TO THE ACCURACY FOR THE DETERMINATION OF EFFECTIVE MASS
IN A STRONGLY ALLOYED MATERIAL.   THE MOST ACCURATE DIRECT METHOD OF
DETERMINING EFFECTIVE MASS, THE METHOD OF CYCLOTRON RESONANCE, IS
INAPPLICABLE TO STRONGLY ALLOYED SEMICONDUCTORS (THE CONDITION OF ST 1
REQUIRED FOR RESONANCE IS NOT SATISFIED), AND MASSES ARE USUALLY
DETERMINED BY METHODS HAVING LOW ACCURACY. FOR THIS REASON IT IS OF
INTEREST TO INVESTIGATE THE POSSIBILITY OF DETERMINING M SEXTILE BY
ELASTIC CONSTANT DATA. THE AUTHOR'S METHOD PERMITS SENSING OF VARIATION
OF M SEXTILE SUBD IN THE PRESENCE OF STRONG ALLOYING CAUSED BY THE
NONPARABOLIC NATURE OF THE BANDS (P-GAAS, P-SI), AND IT ALSO PERMITS
DETERMINATION OF EFFECTIVE MASSES IN UPPER SYSTEMS OF MINIMA.
APPLICABILITY OF THE METHOD IS LIMITED TO SUBSTANCES IN WHICH THE EFFECT
OF CONDUCTION ELECTRONS (HOLES) ON THE ELASTIC CONSTANT IS OBSERVED.
VALUES OF EFFECTIVE MASSES ARE TABULATED FOR GERMANIUM, SILICON AND
GALLIUM ARSENIDE.   FACILITY: INSTITUTE OF STEEL AND ALLOYA,
MOSCOW.

UNCLASSIFIED

106494r Technical inhibitors of the acid corrosion of steel studied from electrocapillary curves. Afanas'ev, A. S.; Belinova, L. A.; Malysheva, T. V. (Dnepropetrovsk. Met. Inst., Dnepropetrovsk, USSR). Zashch. Metal. 1970, 6(1), 84-6 (Russ). The relation between the adsorption of surfactants on Hg and their inhibiting action on low-C steel was studied from electrocapillary curves plotted with an Hg electrometer in 20% H_2SO_4 at $25 \pm 1°$ in the range 50–100 mV. The inhibitors were used in amts. of 0.2 wt. %. The type of adsorbed particle was detd. by the max. potential with ($\varphi_{m,i}$) and without ($\varphi_{m,0}$) inhibitors. Cathodic additives gave $\varphi_{m,i} - \varphi_{m,0} = \Delta\varphi_m > 0$ and anodic additives gave $-\Delta\varphi_m < 0$. The stability of adsorption was detd. by the potential at the junction of the branches of electrocapillary curves plotted with and without additives. This corresponds approx. to the potential of desorption φ_{des}. Additives having $\varphi_{des} > +0.5V$ were designated as Type I and those with $\varphi_{des} = 0.34$–$0.44V$, as Type II. For both types there was a relation between the coeff. of corrosion inhibition (γ) and the value $\Delta\varphi_m$. Between $\Delta\varphi_m < 0.2V$ and $\Delta\varphi_m > 0.2V$, the value of γ changed sharply. A parallel was observed between adsorption on Hg and protective effect. The value of γ for Type I cationic surfactant was greater than that for Type II. Surface activity

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AP0049346

is important but is not the only factor in protective activity so that γ does not depend directly on surface tension. Type I inhibitors are adsorbed due to interaction of π atoms in their aromatic rings with Hg surface and also to the adsorption of Cl^- and Br^- ions on the Hg surface which act as "anionic bridges" for the adsorption of org. cations. Type II inhibitors do not contain halogen ions and thus are only adsorbed by the former mechanism. Addn. of KBr increases γ for a Type II inhibitor, changing it to a Type I.

J. E. Scarlett

2/2

19801164

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1/2   030   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--DYNAMICS OF A CHANGE IN THE ELECTRON CURRENT FRACTION IN THE
   CATHODE REGION OF AN ARC DISCHARGE -U-
AUTHOR-(03)-BEYLIS, I.I., LYUBIMOV, G.A., RAKHOVSKIY, V.I.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 307-10

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ARC DISCHARGE, ION CURRENT, ION MOBILITY, CATHODE, ELECTRODE
   PROPERTY, THERMIONIC EMISSION, METAL HEATING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REFL/FRAME--3005/1642   STEP NO--UR/0020/70/191/002/0307/0310

CIRC ACCESSION NO--AT0133547
                         UNCLASSIFIED

CIRC ACCESSION NO--AT0133547
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE UNSTEADY STATE PROBLEM OF THE
DEVELOPMENT OF A CATHODE SPOT IS SOLVED BY USING THE MODEL SUGGESTED
EARLIER (1969), IN WHICH THE IONIC CURRENT IS DETD. MAINLY BY THE
DIFFUSION OF IONS WHICH ENTER FROM THE REGION OF IONIZATION. THUS, THE
UNSTEADY STATE CHANGE IN THE FRACTION OF THE IONIC CURRENT IS DETD. BY
SOLVING THE UNSTEADY STATE DIFFUSION EQUATION FOR THE CONDITIONS THAT
THERE IS A SOURCE OF IONS WHICH RESULTS FROM THE IONIZATION OF NEUTRAL
ATOMS BY ELECTRONS EMITTED FROM THE CATHODE. THE CALCNS. SHOW THAT THE
THERMAL FIELD EMISSION ELECTRON SPOT CAN EXIST ON A HEATED SURFACE ONLY
FOR A LOW VALUE OF THE ELECTRON CURRENT FRACTION (0.5-0.7), BECAUSE A
HIGH SURFACE TEMP. CAN BE MAINTAINED ONLY BY THE IONIC COMPONENT OF THE
CURRENT.   FACILITY: NAUCH-ISSLED. INST. MEKH., MOSK. GOS. UNIV.
IM. LOMONOSOVA, MOSCOW, USSR.

TITLE--OXIDATIVE POLAROGRAPHIC STUDY OF AROMATIC AMINES. II -U-

AUTHOR--BEYLIS, YU.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBHCH. KHIM. 1970, 40(4), 745-50

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLAROGRAPHY, PLATINUM ELECTRODE, AROMATIC AMINE, DIAMINE,
SULFIDE, CYCLIC GROUP, BENZENE DERIVATIVE, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0820   STEP NO--UR/0079/70/040/004/0745/0750

CIRC ACCESSION NO--AP0134553
UNCLASSIFIED

CIRC ACCESSION NO--AP0134553

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OXIDATIVE POLAROGRAPHY ON ROTATING
PT MICROANODES, WAS USED TO SHOW THE EFFECT OF STURCTURE ON THE HALF
WAVE POTENTIALS IN A SERIES OF AROMATIC AMINES, DIAMINES, AND DIAMINO
SULFIDES AT PH 1.5-11.5. THE HAMMETT EQUATION WAS SUCCESSFULLY USED TO
CORRELATE THE HALF WAVE POTENTIAL DATA WITH SUBSTITUENT EFFECT AND A
TABULATION IS GIVEN FOR THE TRANSMISSIBILITY OF THE STRUCTURAL EFFECTS
THROUGH THE C SUB6 H SUB4 RING, CH SUB2 S, AND O BRIDGES, AND BETWEEN PH
RINGS OF BIPHENYL DERIVS. GENERALLY, O AND S BRIDGES WERE BETTER
CONDUCTORS THAT THE CH SUB2 LINKS.   FACILITY: KHAR'KOV,
POLITEKH. INST. IM. LENINA, KHARKOV, USSR.

UNCLASSIFIED

Pesticides

Abstract: Dense shielding of a silver ion by various ligands
without reducing properties makes it possible to obtain photo-
stable complexes. This study concerns the quantitative aspects
of the light sensitivity, thermal stability, and the fungicidal
properties of a number of silver compounds with high light sen-
sitivity. The highest light resistance (1 year+) was shown by
tris-1,10-phenanthroline perchlorate. The high light resistance
is attributed to the dense shielding of the silver ion by three
large ligand molecules which hinder the charge transfer to Ag^+
from outer-sphere ions as well as to the low electron donor capa-
city of the outer-sphere perchlorate ion. It is noteworthy that
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USSR .

high light resistance is typical of thermally stable compounds.
Bis-2,2'-bipyridylsilver nitrate was the only compound to pass
the standard tests for biological activity (15 days). Silver
complexes with 1,10-phenanthroline and ethylenethiourea also show
promise with regard to both light resistance and biological
activity. These compounds must be used in the form of nitrates
or perchlorates with a co-ordination-saturated inner sphere. Test
data on the light resistance and biological activity of complex
silver compounds, their formulas, ligands, complex concentration
in solution and test durations are given.

2/2

YAKHNO, N. N., RAYT, M. L., BEYN, A. M., and LATASH, L. P., Laboratory of
Problems of the Control of Functions in the Organism of Man and Animals
imeni N. I. Grashchenkov, and Chair of Clinical Physiology, Central Scientific
Research Laboratory of the First Moscow Medical Institute imeni I. M. Sechenov

"Diurnal Rhythm of Wakefulness and Sleep in Narcolepsy"

Abstract: The diurnal rhythm of wakefulness and sleep was studied in one
patient with monosymptomatic narcolepsy (attacks of sleep during daytime)
and in two patients with polysymptomatic narcolepsy (sleep attacks, cata-
plexy phases, and hallucinations during night sleep). Electroencephalo-
grams (frontal, parietal, and occipital areas), electromyograms (mouth muscu-
lature), and electrocardiograms were recorded while the patients were care-
fully observed over a 24-hour period. The total duration of the sleep phase
was markedly prolonged in the patient with monosymptomatic narcolepsy as a
result of the sleep seizures during the day. Stages of pronounced drowsiness
were observed in the patients with polysymptomatic narcolepsy. All patients
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USSR

YAKHNO, N. N., et al., Byulleten' Eksperimental'noy Biologii i Meditsiny,
Vol 71, No 3, Mar 71, pp 20-23

displayed a deficit of the various "slow" sleep phases and increased
recurrence of "rapid" sleep phases in the first half of the day and of
delta-sleep phases in the evening and at night. A premature onset and a
greater phasic activity of "rapid" sleep was observed in patients with
polysymptomatic narcolepsy.

2/2

USSR   UDC 535.872

BEYNAROVICH, L. N., SALIMOVA, E. A., MARTYNOV, V. P.

"Manufacture of Large Mirrors of Polymers by the Copying Method"

Optiko-mekhanicheskaya Promyshlennost', No 10, 1971, pp 41-44.

BASTRACT: A method is described for manufacture of spherical mirros 700 mm
in diameter of a polyester resin, using silumin as a base. The cost of
these mirrors is significantly lower than similar glass mirrors. The copying
method used is quite straight forward, involving production of a master re-
versed shape by casting of polyester on an optical glass mirror, after which
the reversed shape master is used to produce polyester mirrors of the proper
shape. A photograph is presented of the casting table used for production
of the mirrors.

1/1

USSR   UDC 627.81.034(47+57)

BEYROM, S. G., KASKEVICH, L. N., RYBKA, V. G., SAVKIN, V. M., SHIROKOV, V. M.

"Dynamics of Revision of the Banks of the Novosibirsk Hydroelectric Power Plant Reservoir in 1966"

Translatnon: A brief description of the level and wind-wave conditions of the reservoir, data on the nature of revision of the reservoir banks and the dynamics of the bottom layer of the layers of water involved in the wave action in the shore zone and data on the alluvial displacements along the shore are presented.

1/1

Acc. Nr: AP0053890   Abstracting Service: Ref. Code:
              CHEMICAL ABST. 6-70   4R0075

116306v Cadmium hydroxide and hydroxosulfates, and products of their thermolysis. Margulis, E. V.; Shokarev, M. M.; Beisekeeva, L. I.; Vershinina, E. N. (USSR). _Zh. Neorg. Khim._ 1970, 15(2), 374-9 (Russ). The title compds. were studied by using x-ray diffraction, ir spectrophotometry, DTA and thermal gravimetry. In the investigated sulfates, SO_4^{2-} has D_2 symmetry and is coordinated to 4 Cd^{2+}. The splitting of $\nu (SO_4)$ implies that the strength of the crystal field decreases with the compds. in the order: $CdSO_4 > 2CdO.CdSO_4 > CdSO_4.Cd(OH)_2 > CdSO_4.nCd(OH)_2$. Ir spectra of hydroxosulfates are very complex due to interactions of ν OH with lattice frequencies and due to various natures of the OH present. Thermal stability of hydroxo compds. decreases in the order: $CdSO_4.Cd(OH)_2 > CdSO_4.nCd(OH) > Cd(OH)_2$.   HMJR

pc

REEL/FRAME
19830367

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1/2   032   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--THERMAL DECOMPOSITION OF THE DIMETHYLENE ETHER BOND IN POLYMERS -U-

AUTHOR-(05)-IEVSKIY, V.M., YATSENKO, E.A., GRABARNIK, L.G., SALTYBAYEV,
  D.K., BEYSEBAYEV, M.ZH.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM, 1970, 20(2), 79-80

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL DECOMPOSITION, METHYLENE, ETHER, POLYMERIZATION,
 GLYCOL, PYROLYSIS, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0265   STEP NO--UR/0360/70/020/002/0078/0080

CIRC ACCESSION NO--AP0126037
                      UNCLASSIFIED

CIRC ACCESSION NO--AP0126037
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYMN. OF P,HOCH SUB2 C SUB6
H SUB4 CH SUB2 OH IN BULK AT 140DEGREES IN THE PRESENCE OF P,HEC SUB6 H
SUB4 SO SUB3 H GAVE RCH SUB2 OCH SUB2 R PRIME (I).   THE PYROLYSIS
PRODUCTS OF I OBTAINED IN VACUUM AT SMALLER THAN OR EQUAL TO 180DEGREES
CONTAINED POLYMERIC ALDEHYDES DUE TO HOMOLYTIC SPLITTING OF I RCH SUB2
AND R PRIME CH SUB2 O, WHICH INTERACT, GIVING R PRIME CHO AND RME.   AT
260-360DEGREES, R PRIME CH SUB2 O IS DISPROPORTIONATED TO R PRIME CHO
AND R PRIME CH SUB2 OH, DETECTABLE BY IR SPECTROSCOPY.   FACILITY:
INST. KHIM. NAUK, ALMA-ATA, USSR.

AZIMOV, S. A., MYALKOVSKIY, V. M., NURITDINOV, Kh., RASULKULOV, M. S.,
ABDULLAYEV, A. M., BEYSEMBAYEV, R. U., GAVRILIN, Ye. V., TALIPOV, D. A.,
MULLAZHONOV, E. Zh., TILLAYEV, T., RAKHMANOV, Zh., USMANOV, R.,
ULIMAYEVA, G. A., KHEN, E., YULDASHBAYEV, T. S., Institute of Nuclear
Physics of the Academy of Sciences Uzbek SSR

"Study of the Characteristics of High-Energy Interactions of Pions and
Nucleons"

Abstract: Experimental data obtained at the Kum-Bel' High-Altitude
Station of the Physicotechnical Institute of the Academy of Sciences
Uzbek SSR are reported. The station is 3200 m above sea level. The
setup contains three series of wide-gap spark chambers, with effective
areas of 2 m^2 placed above and below the target. The Cerenkov spectro-
meter with total absorption and an ionization calorimeter with an area of
10 m^2 were used to measure the primary energy E_0. Up to the present time
experimental data obtained over 630 hours of operation of the device have
been processed, with a high-voltage pulse being supplied to the electrodes of
the spark chambers. Showers with an energy of > 200 Gev generated in the target
were selected for analysis. The following ratio was obtained for the number
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USSR

of primary charged N_c and neutral N_n particles: $N_c/N_n = 2.3 \pm 0.3$; this shows that the proportion of charged particles is ∿34% of all nuclear active particles, thus making it possible to study pion-nuclear collisions by comparing the characteristics of the interaction of charged and neutral primary particles. A weak functional dependence between the inelasticity coefficient $\langle k_\eta \rangle$ and the atomic number of the target nucleus and a strong functional dependence between this coefficient and the nature of the primary particles were obtained for interactions of hadron with $E_0 > 200$ Gev. $\langle n_s \rangle$ is almost a logarithmic function of E_0. The average multiplicity in the interaction of pions with neutrons in paraffin is identical within the experimental limit. A considerable azimuthal effect was observed for the angular distribution of secondary particles. The azimuthal effect has its greatest value for showers with $n_s = 8-15$, or a multiplicity close to average.

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ABDULLAYEV, A. M., AZIMOV, S. A., BEYSEMBAYEV, R. U., BELITSKIY, M. T.,
MULLIZHANOV, E. ZH., MYALKOVSKIY, V. M., TALIPOV, T. A., TILLAYEV, T.,
UMEROV, R., KHEN, E., and YULDASHBAYEV, T. S.

"Study of Characteristics of Inelastic Interactions of Cosmic-Ray Particles
in the 10^{11} to 10^{12}-ev Energy Range"

Abstract: Experiments that were performed at the high-altitude test station
(3,200 m.) at Kum-Bel' in Uzbekistan are described. The purpose of the exper-
iments was to investigate the angle of arrival and the energy characteristics
of interactions of pions and nucleons with light and heavy nuclei at 2×10^{11}
to 2×10^{12} ev and the mechanism of generating muons at energies above 2×10^{12}
ev. Equipment consisted of spark chambers, located above and below the target
(paraffin wax, carbon, and iron), a Čerenkov spectrometer of full absorption,
and an ionization calorimeter. This complex method of measurements was found
convenient for use in various modes of operation. A detailed description of
various parts of the installation and their disposition is given in the paper.
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Joint operation of ionizing calorimeters and spark chambers is normally
difficult because of the need for high voltage on the calorimeter electrodes,
combined with the time lag of the input pulse from the spark chambers, amount-
ing to over 20 microseconds. This difficulty was avoided in the present
experiments by storing pulses in memory cells, with the subsequent input of
a high-voltage pulse of about 120 kv. Operation was controlled by a master-
pulse, prior to which all parts of the equipment were kept inoperative.
    Results of 200 hours of the joint operation of a Čerenkov spectrometer
and ionizing calorimeter, with graphite used as the target, have been pro-
cessed so far. For analysis, showers with energy above 1.5×10^{11} ev were
selected, 130 of them having been observed. The ratio of charged to neutral
nucleons were determined and, from it, the fraction of charged pions of the
total nucleus-active stream of particles. The inelastic coefficient for the
formation of π^0-mesons was computed from the experiments related to the
interaction of neutral particles with nuclei of graphite.
    It is concluded that the combination of ionizing calorimeter with
Čerenkov spectrometer of full absorption for the simultaneous determination
of energy of primary particles made it possible to determine the fraction of
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USSR

energy supplied by the ionizing particles $\widetilde{\eta}$, since a Čerenkov spectrometer measures only the energy emitted by relativistic particles. It was found that for the mean energy of primary particles of 350 Gev the energy part lost on nuclear fissions in the spectrometer, with CCl_4 as the light emitter, is $\widetilde{\eta}$ = 0.25,

CSO: 1862-W   - END -

3/3

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AZIMOV, S. A., BEYSEMBAYEV, R. U., MULLADZHANOV, E. ZH.,
CHUDAKOV, V. M., YUDASHBAYEV, T. S., Institute of Nuclear
Physics, Academy of Sciences, Uzbek SSR

"Azimuthal Relations and Fireballs"

Abstract: Azimuthal correlations are detected in nuclear inter-
actions at energies of hundreds of Gev. From the point of view
of a model of a single fireball, the cause of the correlations
may be its formation and "rotation."

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USSR   UDC 546.26:118.07

RYSKULOV, T., BEYSHEKEYEV, ZH., KOZHAKHMETOVA, R., DZHUNDUBAYEV, K., and
ASHIMBAYEVA, B., Institute of Organic Chemistry, Academy of Sciences Kirgiz.
SSR

"Organophosphorus Derivatives of Piperazines"

Abstract: Reaction of monosubstituted amyl- and benzylpiperazines with phos-
phonic acid dichlorides and phenylamidophosphoric acid chloride in presence
of dry triethylamine yields novel amidophosphonates and amidophosphates. All
of the amidophosphonates are crystalline products; the di(1-amylpiperazinyl-
4)phenylamidophosphate is an oily product which can be isolated by conversion
to a picrate. Another possible synthetic method for amidophosphates is based
on the reaction of monoamylpiperazine with dialkyl(aryl)phosphoric acid
chlorides in benzene and in presence of dry triethylamine.

1/1

USSR   UDC 547.26'118

DZHUNDUBAYEV, K. D., ALDASHEVA, A., BEYSHEKEYEV, Zh., KOZHAKHMETOVA, R. I.,
Institute of Organic Chemistry, Academy of Sciences of the Kirgiz SSR

"Synthesis of Phosphites Based on 10-(2,3-Epoxypropyl)phenothiazine"

Abstract: Neutral phosphites are synthesized by the reaction of 10-(2,3-
epoxypropyl)phenothiazine with phosphorus trichloride and various alkyl-
(aryl)phosphorous acid dichlorides. The reaction takes place in the presence
of small quantities of hydrochloric acid:

$$P(OCH-CH_2\Phi)_3 \xleftarrow{PCl_3} \underset{CH_2}{\overset{CH_2\Phi}{CH}}\!\!>\!O \xrightarrow{ROPCl_2} ROP(OCH-CH_2\Phi)_2$$

(with CH₂Cl groups shown above the OCH carbons)

Φ-phenothiaziny1-10.
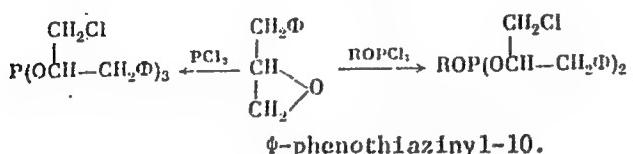
1/2

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USSR

DZHUNDUBAYEV, K. D., et al., Zhurnal Obshchey Khimii, Vol 42(103), No 2,
Feb 72, pp 340-342

The reaction with phosphorus trichloride yields tri[1-chloro-3-(pheno-
thiazinyl-10)propyl-2] phosphite, while the acid dichloride gives
di[1-chloro-3-(phenothiazinyl-10)propyl-2] alkyl(aryl) phosphites. The
structure of the compounds was identified by IR-spectroscopy.

2/2

RYSKULOV, T., BEYSHEKEYEV, ZH., and DZHUNDUBAYEV, K. D., Institute of Organic Chemistry, Academy of Sciences KirgizSSR

"Synthesis of Phosphates and Thiophosphates Based on 1-Benzyl-4-(β -hydroxy-propyl)-piperazine"

Abstract: Searching for new physiologically active compounds, several phosphate and thiphosphate derivatives of 1-benzyl-4-(β -hydroxypropyl)-piperazine (I) were synthesized by reacting (I) with dialkyl(aryl)phosphoric and thiophosphoric acid chlorides in benzene and in presence of triethylamine. No biological data are reported.

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USSR   UDC 542.91+661.718.1

DZHUNDUBAYEV, K. D., BEYSHEKEYEV, Zh., ALDASHEVA, A., KOZHAKHMETOVA, R. I.,
SULAYMANOV, A., TOKTOBEKOVA, T., Institute of Organic Chemistry, Academy of
Sciences of the Kirgiz SSR

"Synthesis of Mixed Phosphites Based on 10-[β-Hydroxypropyl(ethyl)]phenothia-
zine"

Abstract: The authors studied the reaction of 10-(β-hydroxypropyl)pheno-
thiazine and 10-(β-hydroxyethyl)phenothiazine with alkyl(aryl)phosphorous
acid dichlorides, phosphorus trichloride and dimethylamidophosphorous acid
dichlorides:

1/1

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USSR

BEVSHEKEYEV, ZH., DZHUNDUBAYEV, K., ALDASHEVA, A., KOZHAKHMETOVA, R. I., TONTOBEKOVA, T.

"Phosphorylation of 10-(2,3-Epoxypropyl)phenothiazine"

Abstract: In a continuing search for physiologically active phenothiazine derivatives, a study was made of the reaction of 10-(2,3-epoxypropyl)phenthiazine with β-alkoxyvinylphosphonic anhydrides, thio- and dithioanhydrides. A series of previously unknown crystalline heterocyclic esters were prepared by the cited reaction. The reaction with thioanhydrides gave the esters with a 1,2,3-oxaphosphathiazole ring structure, as indicated by their IR spectra. The yields, mp, and elemental analysis data of the products are tabulated and their preparation is described.

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USSR

UDC 542.91+661.718.1

PETROV, K. A., KHORKHOYANU, L. V., BEYSHEKEYEV, Zh., and DZHUNDUBAYEV, K.

"Phosphorus-containing Phenothiazine Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 1, Jan 71, pp 110-114

Abstract: In searching for physiologically active substances the authors synthesized previously unknown phosphates, phosphonates and thiophosphonates of phenothiazine derivatives with residues of phosphorus acids bonded to the nitrogen atom of the phenothiazine nucleus by a hydrocarbon chain. [β-(Phenothiazinyl-10) isopropyl] phosphates were obtained by the reaction of chlorophosphates with 10-(β-hydroxypropyl)phenothiazine. Bis[β-(phenothiazinyl-10)isopropyl] methylphosphonate was obtained from methylphosphonic acid dichloride and 10-(β-hydroxypropyl)phenothiazine. [β-(Phenothiazinyl-10) isopropyl] diethylthiophosphinate was obtained from the diethylamide of diethylphosphinous acid and 10-(β-hydroxypropyl)phenothiazine with subsequent addition of sulfur to the phosphinite. Sodium phenothiazine reacts with diethyl esters of chloromethyl- and β-chloroethylphosphonic acids to give N-ethylphenothiazine and diethyl [β-(phenothiazinyl-10)ethyl] phosphonate respectively. The oxidation of [β-(phenothiazinyl-10)isopropyl] phosphates was studied.
1/1

USSR

UDC 616.993.162-022.39-084.47-036.8

SERGIYEV, P. G., BEYSLEKHEM, R. I., MOSHKOVSKIY, Sh. D., DEMINA, N. A.,
KELLINA, O. I., SHUYKINA, E. Ye., SERGIYEV, V. P., DUKHANINA, N. N., TRIYERS,
I. I., SHCHERBAKOV, V. A., YARMUKHAMEDOV, M. A., USKOV, N. Ye., LOSIKOV, I. N.,
and NEDOSPELOVA, Ye. I., Institute of Medical Parasitology and Tropical Medicine
imeni Ye I. Martsinovskiy, Ministry of Health USSR, Moscow

"Results of Mass Vaccinations against Zoonotic Cutaneous Leishmaniasis"

Abstract: Preventive mass vaccinations with a virulent strain of Leishmania
tropica major were found to give reliable protection against cutaneous leish-
maniasis. Only virulent strains can be used for vaccination. The degree of
inoculation with such strains is almost 100%, the inoculative process having,
as a rule, a favorable effect. The maximum size of the vaccination lesion does
not exceed 2 cm in diameter in 3/4 of the subjects vaccinated. In practically
all cases, the process does not last more than 5-6 months. Morbidity occurred
in the group vaccinated with the low-virulence strain, among those without
lesions, and among those whose lesions were less than 0.5 cm in diameter.

1/2

USSR

SERGIYEV, P. G., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 39, No 5, Sep/Oct 70, pp 541-551

Secondary pyococcal infections represented the only complications observed; allergic exanthem was noted occassionally. In order to prevent local and general allergic reactions after vaccination, it is necessary to exclude persons who have had cutaneous leishmaniasis. If past disease cannot be revealed by means of anamnesis or medical examination, the intracutaneous leishmanin test is recommended. The level of the virulence in inoculative strains should be periodically tested, since insignificant initial virulence or its weakening during culturing make a given strain unfit for preparation of inoculum.

TITLE--AUTOMATIC CONTROL OF THE PARAMETERS OF OXYGEN CONVERTER MELTING -U-

AUTHOR-(05)-BEYTELMAN, L.S., BELENKIY, YU.YA., IZMAYLOV, G.A., YERMOLAYEV,
   O.A., KULKOV, S.V.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(3), 225-8

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METAL OXYGEN CONVERTER, METAL MELTING, AUTOMATIC CONTROL
   SYSTEM, STEEL MANUFACTURE PROCESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1993   STEP NO--UR/0133/70/030/003/0225/0228

CIRC ACCESSION NO--AP0118952
                    UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0118952

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SCHEME OF AN AUTOMATIC CONTROL
IS PRESENTED, IN WHICH ALL MAJOR PARAMETERS OF BLOWING ARE CONTROLLED AS
A FUNCTION OF GAS VOL. AND ITS CO_2 CONTENT. INDUSTRIAL TRIALS
SHOWED THE VELOCITY AND ACCURACY OF THE SYSTEM SUFFICIENT FOR THE
PRODUCTION OF THE DESIRED BLOWN METAL.

UNCLASSIFIED

Abstract: The desiderata and shortcomings of educational campaigns dealing with alcoholism are discussed, with critical reference to several authors in the field. Drunkenness, a social phenomenon, and alcoholism, a true disease must be distinguished. The lack of systematic efforts and a scientific approach to alcoholism are deplored. The need for evaluating the effectiveness of treating alcoholism is urged. Scientific indices by which to measure the effectiveness are the number of alcoholics asking for help, and the percentage of relapses. The need for a broad educational campaign that is accurate and scientific as well as comprehensible to the public is emphasized. The need for winning over the public, for establishing a positive relationship with it, is also stressed. Avoidance of extreme, unrealistic, unconvincing slogans is recommended. The danger of regular use of alcohol as a possible cause of alcoholism is pointed out. An all-out campaign to stop completely the use of alcohol is considered unrealistic. Cooperation of medical and administrative personnel of various enterprises is urged.

1/1

TITLE--DRYING GRANULATED FERTILIZERS IN ROTARY DRIES -U-

AUTHOR-(04)-MAYZEL, YU.A., GOLUBEVA, A.M., YEROFEYEVA, M.V., BEYZERMAN,
  L.R.
COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(2), 117-21

DATE PUBLISHED--------70

SUBJECT AREAS--AGRICULTURE

TOPIC TAGS--CHEMICAL DRYING, PHOSPHORUS FERTILIZER, PARTICLE SIZE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0175   STEP NO--UR/0064/70/046/002/0117/0121

CIRC ACCESSION NO--AP0123946
                            UNCLASSIFIED

CIRC ACCESSICN NO--AP0123946

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN DRYING OF GRANULATED AMMONIATED
  SUPERPHOSPHATE FERTILIZERS IN ROTARY DRUM DRIERS, THE PARTICLE SIZE OF
  THE GRANULES CAN EITHER DECREASE OR INCREASE (DEPENDING ON THE EXACT
  NATURE OF THE FERTILIZER, THE RAW MATERIALS USED, THE INITIAL GRAIN
  SIZE, ETC.) BUT IN BOTH CASES THE RELATION BETWEEN THE F_1-F_2
  RATIO (WHERE F_1 AND F_2 ARE THE INITIAL FAND FINAL EQUIV. SURFACE
  AREAS OF THE GRANULES) AND THE THERMAL LOAD DURING DRYING IS
  SATISFACTORILY DESCRIBED BY A PARABOLIC (DESCENDING OR ASCENDING) CURVE.
  A METHOD FOR THE AUTOMATIC CONTROL OF THE DRYING PROCESS ON THE BASIS
  OF PARTICLE SIZE IS DESCRIBED.

UNCLASSIFIED

AA0052665 *BEYZYM* UR 0482 *Ya. T.*

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, /-70

241296 PILE-DRIVING SUSPENSION ARRANGEMENT
differs from that in Pat. 233536 by
hinging carriage 7 to the driving jib 8, at which
end there is a stop made in the form of an
electric jack electrically connected to the switch
terminals placed in a hinged movable carriage,
allowing free motion of the driving jib 8 in the
vertical plane. This improves the construction.
20.4.67. as 1164347/29-14, Add to 233536, LOSHAK,
I.A. et al. "Glavsevkavstroya" Office (15.8.69)
Bul. 13/1.4.69. Class 84c, Int. Cl. E 02d.

Loshak, I. A.; Zal'tsman, T. M.; Grinberg, L. I.; Mokryakov, V. M.;
Mazyar, Ye. Z.; Beyzym, Ya. T.
Konstruktorskoye Tekhnologicheskoye Byuro Spetsializirovannogo
Upravleniya Mekhanizatsii Stroitel'stva Glavsevkavstroya

1/2   19821415

USSR

BEZBAKH, D. K., Engineer

"Effective Efficiency of Heating a Part by a Welding Arc When Working in the Wind"

Abstract: A method is presented for studying the effective efficiency of heating a part by a welded arc subject to the influence of wind during manual welding using type UONI-13/45 electrodes 4 mm in diameter and semi-automatic welding in CO_2 using PP-Yu8 wire. The quantity of heat intro-duced to the specimen was determined by calorimetry, after which the effective efficiency of heating of the product was calculated using formulas presented in the work. The effective efficiency of heating in winds up to 7 m/sec decreases by an average of 3-5% for T-welding and 6-10% for butt welding. Welding in a medium of CO_2 produces a somewhat higher effective efficiency of heating.

1/1
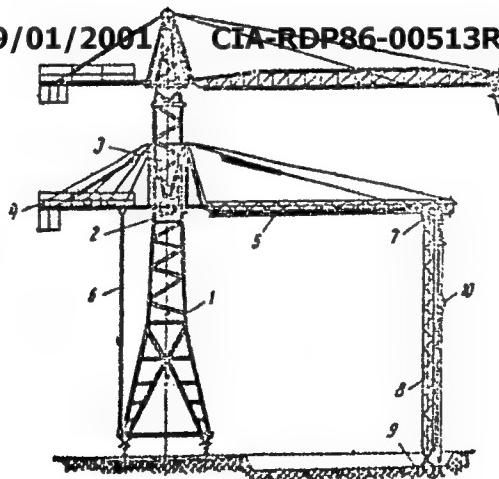
19821416

TITLE--GAS VELOCITIES NEAR THE WELDING ARC -U-

AUTHOR--BEZBAKH, O. K.

COUNTRY OF INFO--USSR

SOURCE--SVAR. PROIZVOD. 1970, (2), 12

DATE PUBLISHED------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--ARC WELDING, GAS WELDING, CARBON MONOXIDE, CARBON DIOXIDE,
   HYDROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0297   STEP NO--UR/0135/70/000/002/0012/0012

CIRC ACCESSION NO--AP0113227
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0113227

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD WAS DEVELOPED FOR DETG.
THE GAS VELOCITIES NEAR THE WELDING ARC DURING WELDING WITHOUT ADDNL.
PROTECTION. EXPTS. HAVE BEEN CARRIED OUT WITH THE WIRE PP-YU 8 2 MM IN
DIAM. THE FORMED GAS CONTAINED: CO 58, CO SUB_2 21, H SUB_2 O 14, AND H
SUB_2 7PERCENT, ITS MEAN VELOCITY WAS 1-2 M-SEC, AND TEMP. 980 PLUS OR
MINUS 20DEGREES. AN INCREASE IN THE CURRENT LED TO AN INCREASE OF GAS
VELOCITY. A. SIMECEK.

UNCLASSIFIED

TITLE--INTERACTION OF SULFUR COMPOUNDS OF COAL WITH SOME MINERAL
   SUBSTANCES DURING THERMAL BREAKDOWN -U-

AUTHOR-(04)-BRUK, A.S., KUTOVOY, P.M., GONCHAROV, V.F., BEZBAKH, ZH.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM. TVERD. TOPL. 1970, (1), 66-70

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS, MECH., IND.,
   CIVIL AND MARINE ENGR

TOPIC TAGS--SULFUR, COAL, BLAST FURNACE, COKE, IRON, QUALITY CONTROL,
   CALCIUM COMPOUND, CHEMICAL SEPARATION, HYDROGEN SULFIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0756   STEP NO--UR/0467/70/000/001/0066/0070

CIRC ACCESSION NO--AP0107298
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0107298

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DECREASING THE S CONTENT IN BLAST
FURNACE COKE MAY IMPROVE THE IRON QUALITY. WEST DONETSK COAL, EASILY
SINTERING, CONTG. 2.64PERCENT S AND 39.4PERCENT VOLATILES, WAS TREATED
VARIOUSLY WITH SIO SUB2, FE, AND A MAGNETITE CONC., CONTG. 68PERCENT FE,
PARTLY AS FEO. THE S CONTENT IN THE INITIAL MIXTS., IN THY INTERMEDIATE
PRODUCTS OF CONTINUOUS COKING, AND IN THE RESULTING COKE ARE PLOTTED.
MAX. FORMATION OF H SUB2 S PROCEEDED THROUGH THE STEPS OF RAPID HEATING
AND ISOTHERMAL THERMAL TREATMENT UNDER THE ACTION OF HIGHLY ACTIVE H.
ALL ADDITIVES EXCEPT FE FACILITATED THE GASIFICATION OF S BEFORE
CALCINING, WHILE AFTERWARDS CHIEFLY NONVOLATILE S COMPDS. WERE FORMED.
USE OF HIGH S COALS FOR PREPN. OF BLAST FURNACE COKE IS POSSIBLE ONLY
WHEN THE COALS ARE EASILY SINTERING. ADDN. OF CA COMPDS. INCREASED THE
AMT. OF S REMAINING IN THE COKE, BUT IN THE FORM OF CAS, WHICH WAS NOT
DETRIMENTAL TO IRON QUALITY.

UNCLASSIFIED

BEZBORODOV, A

BIOCHEMICAL, PHYSIOLOGICAL AND MORPHOLOGICAL CHARACTERISTICS
OF CONTINUOUS CULTURE OF A LYSINE PRODUCER.   G14-14
G.Vesina, N.Buklisa, S.Selga, A.Alexandrova, A.Bezborodov,
V.......
The August Kirchenstein Institute of Microbiology
Latvian Academy of Sciences, Riga, Latvia, USSR

Kinetics of L-lysine biosynthesis by the auxotrophic mutant
Brevibacterium sp.... was studied. The experiments were performed in
a complex (molasses-maize) medium balanced with the help of rotatable
method of the medium basic ingredients planning. The continuous
fermentation was realized in accordance with chemostat principle;
molasses concentration (S) and aeration intensity (pO_2) were used
as growth limiting factors.
    It was found that the cellular RNA content is in ordinal rela-
tion to the growth rate (μ) and the medium growth limiting factor.
Protein and DNA content in the biomass are more stable. At higher
growth rate the constructive metabolism and energetic processes in
a cell increase. Close correlation is stated between the L-lysine
biosynthesis and citrate dehydrogenase, lactate dehydrogenase and
total reductive activity of cells.
    Morphologic changes of cells in various conditions of cultiva-
ting were studied by the electronic microscopy method.
    The continuous L-lysine biosynthesis process kinetics has
shown that the values of the specific growth rate, specific lysine
biosynthesis ability, metabolism coefficients, economic coefficients
and culture productivity depend on the flow rate and the growth
limitation.

So: OOE 324/14086-72, 19 Jun 72; 4th International Fermentation Conference
     Kyoto, Japan - 19-26 March 1972 (Abstracts of Soviet Papers)

USSR

BEZBORODOV, A. M., Professor

"Microbiological Synthesis of Amino Acids"

Abstract: The article describes cultures, the biogenesis mechanism and some technological operations for the production of amino acids by the method of microbiological synthesis, particularly glutamic acid, lysine and tryptophan.

1/1

BEZBORODOV, A.M.

G5 4

G5-6

DISTRIBUTION OF PRODUCERS OF ALKALOIDS AMONG THE FUNGI.
A.M.Bezborodov, I.I.Guzeva, O.V.Krupina, N.F.Bechrakhanova.
Institute of Biochemistry and Physiology of Microorganisms,
Academy of Sciences USSR, Puschino.

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An ability of different representatives of fungi to synthesize alkaloids under the
submerge and surface culturing was studied. Two kinds of media were used for the growth
of fungi: (a) synthetic medium, containing mannite and succinic acid as the carbon source;
(b) complex one with corn-steep extract, peptone and glucose.

Medium and mycelium were subjected to an analysis for alkaloid content. Mycelium
was homogenized. Then alkalescence and extraction by the chloroform-isobutanol mixture
(4:1) were carried out. After that alkaloids were transfered into an aqneous solution
by acidification with sulphuric acid. The procedure was repeated twice Further an
analysis was carried out.

Qualitative alkaloid content tests were put with 6 reagents typical of alkaloids
and close related to them compounds. As the result it was stated that 27 strains of
103 ones examined belonging to Penicillium, Aspergillus, Fusarium, gave all the 6 reactions,
gave 5 positive reactions and 29 did 3.

Most of extract didn't give colorimetric reaction typical of indole derivatives.
Chemical nature of compounds obtained is under investigation.

So: OOE 324/14086-72, 19 Jun 72; 4th International Fermentation Conference
Kyoto, Japan - 19-26 March 1972 (Abstracts of Soviet Papers)

1/2   025   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--A STUDY ON THE CONDITIONS FOR BIOSYNTHESIS OF UBIQUINONE,8 AND
   VITAMIN K SUB2 BY SERRATIA MARCESCENS -U-
AUTHOR-(02)-BEZBORODOV, A.M., CHERMENSKAYA, T.S.

COUNTRY OF INFO--USSR $\mathcal{B}$

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 316-321

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BIOSYNTHESIS, VITAMIN, CULTURE MEDIUM, GLUTAMIC ACID, GLUCOSE,
   AMMONIUM PHOSPHATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1933/1415   STEP NO--UR/0220/70/039/002/0316/0321

CIRC ACCESSION NO--AP0054278
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0054278

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY ON THE CONDITIONS FOR
  GROWTH OF SERRATIA MARCESCENS 42 AND FOR BIOSYNTHESIS OF UBIQUINONE,8
  AND VITAMIN K SUB2 (40) HAS SHOWN THAT OPTIMAL VALUES OF PH FOR
  FERMENTATION WERE 7.0-9.0. POOR GROWTH OF THE CULTURE AND LOW
  PRODUCTION OF VITAMIN K SUB2 (40) WERE REGISTERED AT PH 3.0.   THE
  HIGHEST YIELD OF BIOMASS, Q,8 AND VITAMIN K SUB2 (40) WAS FOUND DURING
  THE STATIONARY PHASE OF GROWTH (THE 2-30 DAYS) WHEN THE MAIN COMPONENTS
  OF THE MEDIUM HAVE BEEN CONSUMED.   CHANGES IN THE CONCENTRATION OF
  GLUCOSE AND AMMONIUM PHOSPHATE IN THE MEDIUM AFFECTED GROWTH OF THE
  CULTURE BUT EXHIBITED ALMOST NO EFFECT UPON BIOSYNTHESIS OF Q,8 AND
  VITAMIN K SUB2(40). MEDIA CONTAINING GLUTAMIC ACID (20-50 G-L)
  STIMULATED MAXIMAL ACCUMULATION OF BIOMASS AND ITS HIGH PRODUCTIVITY
  WITH RESPECT TO Q,8 AND VITAMIN K SUB2(40).   NO CORRELATION WAS
  ESTABLISHED BETWEEN CHANGES IN THE RATIO VITAMIN K SUB2(40)-Q,8 AND
  COMPOSITION OF THE MEDIA OR THE GROWTH PHASE OF THE CULTURE. THE RATIO
  OF CONCENTRATIONS K SUB2-Q,8 WAS 20-50PERCENT IN DIFFERENT EXPERIMENTS.

UNCLASSIFIED

BEZBORODOVA, S.I.

EXTRACELLULAR RIBONUCLEASE OF PENICILLIUM BREVICOMPACTUM.
S.I.Bezborodova, T.V.Ilyina, V.I.Krupianko, V.M.Grishchenko.   G7
Institute of Biochemistry and Physiology of Microorganisms,
USSR Academy of Sciences, Puschino, USSR.

The ability of Penicillium fungi to release extracellular RNases
with optimum pH in mild acetic medium has been established.
The extracellular RNase of Penicillium brevicompactum has been purifi-
ed to homogenous state. Optimum pH, specificity, mode of action on native
substrates, stability, thermostability, influence of SH-reagents and urea
have been examined as well as inhibition by products of reaction and by
their analogues.
pH-dependence of kinetic parameters of transferase and hydrolase
steps of reaction has been determined using low molecular weight substra-
tes (C>p, U>p, ApAp and CpA).
The amino acid composition of the enzyme has been studied and the
effect of carboxymethylation, photooxidation and chemical reduction on the
enzyme activity has been investigated.
On the basis of data obtained one may draw a conclusion that Pen.
brevicompactum RNase is similar to RNase T₂ of Aspergillus oryzae and to
RNase I of A. ... . Histidine residue and carboxylic group appear to
be in the active site of the enzyme.

So: OOE 324/1-036-72, 19 Jun 72; 4th International Fermentation Conference
Kyoto, Japan - 19-26 March 1972 (Abstracts of Soviet Papers)

Phytology

BEZBORODOVA, S. I., and IL'INA, T. V., Institute of the Biochemistry and Physiology
of Microorganisms, Academy of Sciences USSR, Pushchino-na-Oke

"Extracellular Phosphomonoesterases Produced by Fusarium"

Abstract: Nine of 13 fungi of the genus Fusarium released both acid and alkaline
phosphomonoesterases (PME's) into the culture fluid of a complex medium. Fusarium
virio did not release PME and F. solani released only a small amount. Acid PME's
predominated in all of the fluids investigated. Optimum pH, thermolability, and
the effect of various substances (including bivalent metals) on F. oxysporum and
F. sontoctum PME were studied. Acid PME's had an optimum pH of 5.2; 7.8 was the
optimum pH for alkaline PME's of F. oxysporum. The PME's were thermolabile at pH
value from 2.8 to 9.0. The acid PME's were not inhibited by EDTA or citrate; the
alkaline PME's were. Phosphate inhibited the activity of both acid and alkaline
PME's. Cobalt, calcium, and magnesium activated the PME of F. oxysporum to a
higher degree than that of F. sontoctum. The extracellular alkaline PME of F.
oxysporum was inhibited by inorganic phosphate ions; the acid PME was not. Most
of the investigated cultures of the genus Fusarium thus produce and release acid
and alkaline PME's into the culture fluid. The acid PME's appear earlier and in
larger quantities than do the alkaline PME's.
1/1

ZIBOROV, A. I., BEZBORODOVA, V. M., and KIREYEV, P. S.

"Cd$_x$Hg$_{1-x}$Se Photosensitivity Spectra"

Abstract: This brief communication provides the results of experiments designed to investigate the photosensitivity spectra of Cd$_x$Hg$_{1-x}$Se compounds made by the Bridgman method in a vertical oven. Formation of the solid solutions of cubic structure for values of x up to 0.8 was roentgenographically confirmed, and the measurements made were subject to an average error of $\pm 2.5\%$. A description of the preparation procedure for the specimens is given; their photosensitivity spectra were obtained with a device using the IKS-21 spectrometer, narrow-band amplifier U-2-6, and synchronous detector SD-1. The spectra were shifted to the long-wave side with increasing mercury content of the solution; at the same time, the bandwidth increased and the photosensitivity dropped with increasing shadow conductivity. Curves are plotted for the maximum spectral distribution energy as a function of the specimen composition at 77° K, and for other obtained results.
1/1

I. ASTRONOMY

News

Session of the All-Union Astronomical and Geodetic Society

More than 120 representatives of sections of the VAGO (All-Union Astronomical and Geodetic Society) met in Odessa in February 1970. A regular plenary session of the VAGO Central Committee was held.

In addition to the traditional general sessions devoted to the comprehensive report of the Central Committee and its discussion, three sections were in attendance: astronomical, geodetic and instrumental-methodological, as well as a session of a group of investigators of noctilucent clouds.

The plenary session heard reports, by N. A. Dzirkls and V. P. Tsesevich, on the work of the Lithuanian and Odessa Divisions of the VAGO. In the reports and during the discussions, much attention was given to people's observatories. Plans have been formulated for people's observatories, but inadequate funds are available for their construction, and most importantly, it is impossible to acquire telescopes. It is true that in Moscow, Riga, Kiev and some other cities amateur astronomers are fabricating homemade refracting telescopes, but in insignificant numbers, and therefore the construction of telescopes for people's observatories is essential.

(Details of the plans that are already arriving are with plans for people's observatories which are under the direction of I. M. Bezchastnov. See Zemiya i Vselennaya, No. 4, 1968, p 75.)

At the plenary session a report was given by P. P. Argunov, creator of an observatory of the new type. Now at Odessa Observatory he is in charge of the construction of a 6-cm telescope designed by P. P. Argunov and L. S. Rashid. In the future plans call for building a bigger telescope.

JPRS 51452
26 Sept 70

- 1 -

Philosophical problems in astronomy were discussed in reports by V. V. Kazyutinskiy, S. G. Sudakov and K. A. Portsevskiy told about the objectives of the VAGO in relation to the 100th anniversary of the birth of Vladimir Il'ich Lenin.

D. Ya. Martynov, President of the VAGO, reviewed recent data on Venus and Mars. He attributed the high surface temperature of Venus to singular greenhouse effects in its atmosphere and exhibited beautiful photographs of the Martian surface. V. P. Lavrov, together with V. D. [...] gave a report entitled "Photographing of the Moon and Earth from Space Stations." This was an exceptionally interesting and [...] analysis of excellent color photographs of the moon and our planet.

Those participating in the plenary session attentively heard a [...] report on the objectives of scientific research work in the field of geodesic engineering.

(An article based on this report will be published in Zemlya i Vselennaya.)

The interests of amateur astronomers were reflected in the work of the astronomical section. A report by V. A. Brenshten, read by V. G. [...] was devoted to the results of the first meeting of young astronomers, held in the summer of 1968 at Shemakha (Azerbaydzhan SSR). The observations which were made by amateur astronomers were discussed by V. P. Tsesevich, [...] B. Razgov.

[...] of two instructional-methodological section the [...] with the teaching of astronomy in the schools. Many of the [...] reported those on astronomy talks to meet the re- [...] of the intermediate school student. It was [...] of the parallel publication of the manu- [...] (author Ye. P. Levitan) which has long [...]

[...] of the organizational committee for the fifth congress [...] Sept-Oct 1970 in Kazan', was announced at the [...] were handed out to full VAGO members.

Following the plenary session its participants took excursions [...] visited two special research groups of the participants, [...] the services division of the Odessa Astronomical [...] The plenary session participants visited [...] town and ballet.

[...] plenary session of the Central Committee of [...] Society," by V. P. Tsesevich; [...] (Zemlya i Vselennaya No 4, 1969, pp 71-72)

- 2 -

Abstract: Formation of a conditioned reflex is based not just on generaliza-
tion and transformation of evoked potentials to light (used as the condition-
ing signal) but on the fact that the responses to the conditioning signal in
the visual and somatosensory areas in the cortex become synchronous and
identical in their configuration with the reactions initially occurring in
response to the reinforcing electrocutaneous stimulation. The crucial aspect
of this development is reached when, as a result of the training, the latent
period of the evoked potentials coincides with the latent period of the motor
reaction. Processes taking place during that interval do not occur in succes-
sion following recruitment of the individual structures along the reflex arc.
Rather, the evoked potentials represent simultaneous activation of all struc-
tures in the visual and somesthetic cortex participating in the analysis and
synthesis of afferent stimuli and in the process of making a decision and
inducing the conditioned behavioral act.

1/1

- 48 -

TITLE--COMPOUNDS OF CERIUM (III) OXALATE WITH HYDRAZINE -U-

AUTHOR-(04)-BEZDENEZHNYKH, G.V., KRYLOV, YE.I., SHAROV, V.A., NEUYMIN,
A.D.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970 15(3) 629-32

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TERNARY FLUID SYSTEM, IR SPECTROSCOPY, HYDRAZINE, OXALATE,
CERIUM COMPOUND, METAL COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

                         UNCLASSIFIED

CIRC ACCESSION NO--AP0115690

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYSTEM CE SUB_2-(C SUB_2 O SUB_4)SUB_3. 10.3H SUB_2 O-N SUB_2 H SUB_4 -H SUB_2 O WAS STUDIED BY IR SPECTROSCOPY. THE COMPLEXES ARE FORMED (MU SUBEFF, CURIE TEMP.): CE SUB_2 (C SUB_2 O SUB_4). 6N SUB_2 H SUB_4. 7.4H SUB_2 O, 2.61, 18DEGREES; CE SUB_2(C SUB_2 O SUB_4)SUB_3. 4N SUB_2 H SUB_4. 9H SUB_2O (I), 2.37, MINUS 40DEGREES; CE SUB_2(C SUB_2 O SUB_4)SUB_3. 3N SUB_2 H SUB_4. 10.2SUB_6 SUB_2 O, 2.51 MUB, MINUS 1ODEGREESK. H SUB_2 O CONTENT OF THESE COMPLEXES CHANGED EASILY. THE IR SPECTRA OF THE COMPLEXES ARE GIVEN AND A PARTIAL INTERPRETATION OF THEIR BANDS IS TABULATED. IT IS ASSUMED THAT I HAS ONLY BIDENTATE N SUB_2 H SUB_4 AND THE REMAINING 2 COMPOS. HAVE MONO AND BIDENTATE N SUB_2 H SUB_4 LIGANDS.

UNCLASSIFIED

USSR

UDC 616.9-036.2-022.375

BEZDENEZHNYKH, I. S., and YELKIN, I. I., First Moscow Medical Institute imeni
I. M. Sechenov

"The Effect of Migration and Other Factors on the Intensity of the Course of the
Epidemic Process"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, Jul 70,
pp 5-8

Abstract: In a continuation of a discussion of the epidemic process begun in an
earlier article published in this journal (1969, No. 2), the authors cite a
variety of statistics on some of the factors that are increasing the incidence of
infectious diseases and the likelihood of epidemics. Not only travel between
countries but also migration within countries in assuming enormous proportions.
For example, the number of people transported by railroads in 1966 increased from
248,500,000 in 1913 to 2,450,400,000 in 1966. Automobiles carried 2,048,900,000,000
persons in 1966 (as compared to none in 1913). Intraurban traffic and daily com-
muting are also adverse factors. For example, persons under 30 who spend more
than one hour a day commuting are absent from work because of illness 1-1/2 times
as often as those living within 30 minutes of their jobs. Crowded housing, vast
increases in the number of children attending various institutions, and steady
expansion of restaurants add to the potential threat of intestinal, respiratory,
and other diseases.
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USSR   UDC 614.4

BEZDENEZHNYKH, I. S., and YELKIN, I. I., Institute of Biophysics, Ministry of Health USSR, and First Moscow Medical Institute imeni Sechenov, Moscow

"Prospects for Improving Epidemiological Methods"

Abstract: A mathematical approach to epidemiology, combined with the traditional methods of observation and experimentation, will facilitate the analysis and prognosis of epidemic processes. Models of important infections can be used to forecast the incidence of a disease, carrier state, and changes in the immunological structure of the population, as well as in the gathering and analysis of information to evaluate an epidemic situation. The introduction of computers promises extensive benefits by permitting continuous observation not only of the course of a disease but also of the timeliness, scope, and quality of preventive measures. Before computers can be used effectively, however, the present disorderly flow of epidemiological information must be systematized.

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1/2   008

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--THE USE OF MATHEMATICAL METHODS IN EPIDEMIOLOGY, REPORT II, EMPIRICAL AND THEORETICAL DISTRIBUTIONS -U-

AUTHOR-(05)-BEZDENEZHNYKH, I.S., BURGASOV, YU.A.; YELKIN, I.I., LEONTYEVA, L.G., TKACHEVA, M.N.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6, PP 3-9

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EPIDEMIOLOGY, APPLIED MATHEMATICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0723

STEP NO--UR/0016/70/000/006/0003/0009

CIRC ACCESSION NO--AP0126435

UNCLASSIFIED

CIRC ACCESSION NO--AP0126435
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NECESSITY OF USING STATISTICAL
METHODS IN THE FIELD OF EPIDEMIOLOGICAL INVESTIGATIONS TIS
SUBSTANTIATED. A METHOD AND INDICATIONS TO DETERMINATION OF THE MEAN
VALUES, OF ASSESSMENT CRITERIA OF THE SIGN VARIABILITY, AND METHODS AN
ANALYSIS OF DISTRIBUTION OF THE DATA IN SOLVING DEFINITE EPIDEMIOLOGICAL
PROBLEMS ARE EXEMPLIFIED. THE LEADING ROLE PLAYED BY ANALYZING THE
MATERIAL NATURE OF THE METHODS INVESTIGATED IN ASSESSING THE RESULTS OF
STATISTICAL TREATMENT OF THE MATERIAL IS EMPHASIZED.   FACILITY:
TSENTRAL'NYY INSTITUT EPIDEMIOLOGII, MOSKVA.

UNCLASSIFIED

BEZDETNYY, N. M., GORBATOV, G. Z., ZEYNALLY, A. Kh., and LEBEDEV,
N. N., Azerbaydzhan State University imeni S. M. Kirov, Baku

"The Photo-EMF Spectral Distribution in SbSI"

Abstract: This brief communication is the consequence of an ear-
lier article authored by some of those named above (Bezdetnyy,
N. M., et al, FTT, 13, 1971, p 1242) in which it was shown that
the near-surface illumination of SbSI layers using light from the
maximum sensitivity region produces a voltage and the flow of
short-circuit currents in the external circuit. These are caused
by the bend in the zones at the ends of the specimen. In the pre-
sent communication, the authors investigate the spectral distribu-
tion of the photovoltaic output of the SbSI layers after dividing
the specimens into two groups depending on the type of bending in
the zones at the ends. The spectral distribution of both groups
is shown.

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BEZDETNYY, T. P.

"Some Representations for Two-Dimensional Distribution of Stationary Random Processes"

Translation: Let $\{\xi_n\}$ be a random series which is stationary in the narrow sense where each random variable ξ_n assumes the values $0, 1, 2, \ldots, m - 1$. For two-dimensional distribution $P_n(i, j) = P\{\xi_0 = i, \xi_n = j\}$, the representation of the following type was obtained:

$$P_n(i, j) = \int_{\frac{i}{m}}^{\frac{i+1}{m}} g_m(m^n x + j/m)\, df(x) \qquad (i = 0, \ldots, m - 2;\; j = 0, \ldots, m - 1)$$

$$P_n(m - 1, j) = P\{\xi_0 = j\} - \int_0^{\frac{m-1}{m}} g_m(m^n x + j/m)\, df(x) \quad (j = 0, \ldots, m - 1),$$

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USSR   UDC 517.512+517.521.8+517.521.5

BEZDITNYY, T. P.

"Theoretical, Probabilistic Interpretation of Some Generalized Methods for the Summation of Series"

Translation: A new method for the generalized summation (P-method) is developed and it is shown that consecutive application of the Hausdorff and the P-methods is equivalent to application of the P-method, but with a different probability distribution function. Also, the Hausdorff method is analyzed in its application to the summation of double series.

                                        Author's summary

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1/2   013   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--SYNTHESIS OF ALKYLPYRIDAZINES FROM FURANS -U-

AUTHOR-(02)-ZELENIN, K.N., BEZHAN, I.P.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(6), 1292-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, FURAN, HETEROCYCLIC NITROGEN COMPOUND,
ORGANIC AZINE COMPOUND, HYDRAZINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0226   STEP NO--UR/0020/70/191/006/1292/1294

CIRC ACCESSION NO--AT0132498
                        UNCLASSIFIED

CIRC ACCESSION NO--AT0132498
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUIMADLAR MIXTS. OF FURAN AND ETO
  SUB2 CN:NCO SUB2 ET IN C SUB6 H SUB6 WERE TREATED WITH 1 VOL. N H SUB2
  SO SUB4 AND THEN WITH 1.5 FOLD EXCESS N SUB2 H SUB4 TO GIVE I AS FOLLOWS
  (R PRIME1, R PRIME2, AND R PRIME3 GIVEN): AS SHOWN ON MICROFICHE.   I
  WERE CHARACTERIZED AS PICRATES, PICROLONATES, OR HCL SALTS. SIMILARLY,
  1,3,DIPHENYL,ISOBENZOFURAN GAVE AN ADDUCT WHICH WITH N SUB2 H SUB4 GAVE
  1,4,DIPHENYLPHTHALAZINE, M. 194.5-95DEGREES. OTHER DIENOPHILES
  (THIOYLANILINE, PHNO) FAILED TO YIELD PRODUCTS WITH FURANS.
FACILITY: VOENNO-MED. AKAD. IM. KIROVA, LENINGRAD, USSR.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--17JUL70

TITLE--N,N,DIALKYLDIAZENIUM BROMIDES IN DIENE SYNTHESIS -U-

AUTHOR--ZELENIN, K.N., BEZHAN, I.P.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 93-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, ELECTRON PARAMAGNETIC RESONANCE, CHEMICAL
SYNTHESIS, MOLECULAR STRUCTURE, SPECTROSCOPIC ANALYSIS, HETEROCYCLIC
NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/1783   STEP NO--UR/0409/70/000/001/0093/0094

CIRC ACCESSION NO--AP0100363
                    UNCLASSIFIED

111400m N,N-Dialkyldiazenium bromides in diene synthesis. Zelenin, K. N.; Bezhan, I. P. (Voenno-Med. Akad. im. Kirova, Leningrad, USSR). *Khim. Geterotsikl. Soedin.* 1970, (1), 93–4 (Russ). $R_2^+N:NH.Br^-$ (0.2 mole) reacted with 0.21 mole $CHR^1:CR^2CR^3:CHR^4$ 4 hr at −5° and worked up gave I [R, R^1, R^2, R^3, R^4, m.p. (2:1 AcOEt-Me$_2$CHOH), and % yield given): Me, H, H, H, H, 188–90°, 82; Me, H, Me, Me, H, 181–3°, 72; Me, Me, H, H, Me, 180°, 95; Et, H, H, H, H,
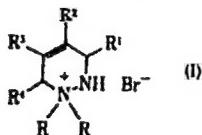
162–3°, 85; Et, Me, H, H, Me, 124–5°, 80. Ir and EPR spectra are given.
J. Panchartek

REEL/FRAME
19841783

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USSR

UDC 620.179.16

ASKAROV, M. A., YAKUSHKO, G. YE., BEZHANOV, R. A,

"An Ultrasonic Defectoscope for the Automatic Monitoring of Large-Diameter Pipes"

Translation: In the article is described an ultrasonic defecto-scope for the automatic monitoring of large-diameter (up to 219 mm) pipes with a wall thickness from 6 to 20 mm, intended for the detection of defects (cracks, pits, foliations, etc.) with dimensions in excess of 2-3 mm. The device has chambers with seeking heads, self-adjusting along the pipe surface; acoustic contact is created by a liquid fed into the chambers, and the defect is registered by an automatic monitor. Note is taken of the high resolving power of the seeking heads, which are provided with

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